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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,658	01/30/2001	Noriyoshi Chizawa	1232-4677	2163

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EXAMINER	
THOMPSON, JAMES A	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/772,658	CHIZAWA, NORIYOSHI	
	Examiner	Art Unit	
	James A. Thompson	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/02/2005, 09/30/2005 and 10/11/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27 and 86* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27 and 86* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/30/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11 October 2005 has been entered.

Specification and Drawings

2. While Examiner has inspected the drawings and the specification and has not found any noticeable defects. However, given the length of the specification and the number and detail of the drawings, Applicant is nonetheless advised to fully inspect the drawings and specification to ensure accuracy, along with proper spelling and grammar.

Response to Arguments

3. Applicant's arguments filed 02 September 2005 have been fully considered but they are not persuasive. The present amendments to the claims are rendered obvious to one of ordinary skill in the art at the time of the invention based on the prior art references previously cited. However, new grounds of rejection have been necessitated by the present amendments to the claims. Accordingly, new prior art rejections are given in detail below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3, 5, 8, 15, 17, 19, 21 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613) and Sugiura (US Patent 4,679,074).

Regarding claims 1, 15 and 86: Orito discloses an image sensing system (figure 1(1) of Orito) constituted by connecting an image sensing apparatus (figure 1(30) of Orito) and image processing apparatus (figure 1(10) of Orito) (column 5, lines 4-7 of Orito). Figure 2 of Orito shows further details of said image processing apparatus (column 4, lines 45-46 of Orito). Figure 5 of Orito shows further details of said image sensing apparatus (column 4, lines 50-52 of Orito).

Orito further discloses that said image sensing apparatus comprises a storage medium (figure 5(73) of Orito) adapted to hold data on image sensing characteristic (column 6, lines 29-34 of Orito); and an output unit (figure 5(77) of Orito) adapted to output the data on image sensing characteristic held in said storage medium to said image processing apparatus (column 6, lines 6-14 of Orito).

Orito further discloses that said image processing apparatus comprises an input unit (figure 2(24) of Orito)

adapted to receive the data on image sensing characteristic output from said image sensing apparatus (column 6, line 66 to column 7, line 6 of Orito); a generation unit (figure 2(17 (portion)) of Orito) adapted to generate image sensing characteristic correction data (column 8, lines 41-45 of Orito) on the basis of the data on image sensing characteristic received by said input unit (column 8, lines 48-53 of Orito); and an image sensing characteristic correction unit (figure 2(17(portion)) of Orito) adapted to correct the influence of an image sensing characteristic on the image data received from said image sensing apparatus (column 8, lines 41-45 of Orito) using the image sensing characteristic correction data generated by said generation unit (column 8, lines 48-53 of Orito). Correcting an image sensing characteristic of image data received from said image sensing apparatus (column 8, lines 41-45 of Orito) inherently requires the generation in some form of said image sensing characteristic correction data in order to perform said correction. The control unit (figure 5(70) of Orito) comprises a CPU (figure 5(71) of Orito), a ROM (figure 5(72) of Orito), and a RAM (figure 5(73) of Orito) (column 6, lines 1-4 of Orito). Said generation unit and said image sensing characteristic correction unit correspond to the associated portion of the physically embodied software stored in said ROM, along with the RAM needed by the CPU to execute said program software, that is used to perform the functions of said generation unit and said image sensing characteristic correction unit.

Orito does not disclose expressly that said image sensing apparatus comprises an image sensing unit adapted to sense an original and output image data of the original; and a shading correction unit adapted to apply shading correction to the image

data output from said image sensing circuit. Orito further does not disclose expressly that said storage medium of said image sensing apparatus is adapted to hold data on an image sensing characteristic which is different from data for the shading correction.

Orito further does not disclose expressly that said image sensing characteristic correction unit of said image processing apparatus corrects the influence of an image sensing characteristic on the shading-corrected image data, and thus performs correction different than shading correction.

Arimoto discloses an image sensing apparatus (figure 2 of Arimoto) which comprises an image sensing unit (figure 2(201) of Arimoto) adapted to sense an original (column 4, lines 3-5 of Arimoto) and output image data of the original (column 4, lines 56-58 of Arimoto); and a shading correction unit (figure 2(211) of Arimoto) adapted to apply shading correction to the image data output from said image sensing circuit (column 4, lines 64-66 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an image sensing unit and shading correction unit as part of an image sensing apparatus, as specifically taught by Arimoto. The motivation for doing so would have been to provide corrected, standardized image data from the scanner, thus improving image quality (column 1, lines 16-22 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito.

Orito in view of Arimoto does not disclose expressly that said storage medium of said image sensing apparatus is adapted

to hold data on an image sensing characteristic which is different from data for the shading correction; and that said image sensing characteristic correction unit of said image processing apparatus corrects the influence of an image sensing characteristic on the shading-corrected image data, and thus performs correction different than shading correction.

Sugiura discloses holding data on an image sensing characteristic (figure 1(102) and figure 4(405) of Sugiura) which is different from data for shading correction (column 2, lines 35-41 and column 4, lines 5-8 of Sugiura); and correcting the influence of an image sensing characteristic different than shading correction (column 2, lines 35-41 and column 4, lines 5-8 of Sugiura). Color conversion based on the connected input device (column 2, lines 35-41 and column 4, lines 5-8 of Sugiura) is clearly a different image sensing characteristic than shading correction.

Orito in view of Arimoto is combinable with Sugiura because they are from the same field of endeavor, namely correction of input digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the storage medium taught by Orito hold data for an image sensing characteristic that is different from data for shading correction, as taught by Sugiura; and have the an image sensing characteristic correction unit taught by Orito correct the influence of said image sensing characteristic, as taught by Sugiura. The motivation for doing so would have been to correct for the various input devices so as to standardize the resultant output (column 1, lines 33-41 of Sugiura). Therefore, it would have been obvious to combine Sugiura with Orito in view of Arimoto to obtain the invention as specified in claims 1 and 15.

Further regarding claim 15: The apparatus of claim 15 is fully embodied within the system of claim 1.

Further regarding claim 86: The apparatus of claim 86 is fully embodied within the system of claim 1.

Regarding claims 3 and 17: Orito does not disclose expressly that said image sensing characteristic includes a characteristic for each of a plurality of colors to be sensed.

Arimoto discloses an image sensing characteristic for each of a plurality of colors (Bd1R,Bd1G,Bd1B) to be sensed (column 20, lines 54-57 and equation 5 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an image sensing characteristic for each color, as taught by Arimoto. The motivation for doing so would have been to correct shading for each individual color (column 21, lines 4-8 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 3 and 17.

Regarding claim 5: Orito discloses that the data on image sensing characteristic is output from said image sensing apparatus to said image processing apparatus upon starting up said image sensing apparatus (figure 6 and column 7, lines 36-38 of Orito).

Regarding claims 8 and 21: Orito discloses that when the data on image sensing characteristic held in said storage medium is updated (column 7, lines 40-44 and lines 58-60 of Orito), said output unit outputs the updated data on image sensing characteristic to said image processing apparatus (column 8, lines 16-18 of Orito).

Regarding claim 19: Orito discloses that the data on image sensing characteristic is output from said image sensing apparatus to the external image processing apparatus in an initial communication there between (column 7, lines 36-44 of Orito).

6. Claims 4, 7, 9-14, 18, 20 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613), Sugiura (US Patent 4,679,074), and Kamisuwa (US Patent 6,728,008 B1).

Regarding claims 4 and 18: Orito does not disclose expressly an image sensor which has a plurality of photoelectric conversion element arrays for respectively photoelectrically converting light of a plurality of colors, and the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

Arimoto discloses an image sensor (figure 21(1001) of Arimoto) which has a plurality of photoelectric conversion element arrays (figure 22(1103-1105) of Arimoto) for respectively photoelectrically converting light of a plurality of colors (column 19, line 68 to column 20, line 7 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an image sensor which converts light into a plurality of colors, as taught by Arimoto. The motivation for doing so would have been to be able to process color images (column 19, lines 61-68 of

Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito.

Orito in view of Arimoto and Sugiura does not disclose expressly that the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

Kamisuwa discloses image sensing characteristics (figure 8 (a,b,c,Ia,Ib,Ic) of Kamisuwa) which indicate spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor (column 8, lines 6-10 of Kamisuwa).

Orito in view of Arimoto and Sugiura is combinable with Kamisuwa because they are from the same field of endeavor, namely the correction of input digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to detect spatial positional deviations in the image scanning using image sensing characteristics, as taught by Kamisuwa. The motivation for doing so would have been that spatial positional deviations are errors in scanning (column 7, lines 46-52 of Kamisuwa), so it is naturally desirable that such errors be fixed. Therefore, it would have been obvious to combine Kamisuwa with Orito in view of Arimoto and Sugiura to obtain the invention as specified in claims 4 and 18.

Regarding claims 7 and 20: Orito in view of Arimoto does not disclose expressly that said image sensing apparatus further comprises updating means for, when an exchangeable unit including said image sensor is exchanged, updating the data on image sensing characteristic held in said storage medium in accordance with a characteristic of the unit.

Sugiura discloses updating unit (figure 3(406) of Sugiura) adapted to, when an exchangeable unit including said image sensor is exchanged (column 4, lines 5-6 of Sugiura), update the data on image sensing characteristic held in said storage medium in accordance with a characteristic of the unit (column 4, lines 6-13 of Sugiura).

Orito in view of Arimoto is combinable with Sugiura because they are from the same field of endeavor, namely digital image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the updating unit taught by Sugiura. The motivation for doing so would have been to compensate for the different properties of the different input devices (column 4, lines 10-13 of Sugiura). Therefore, it would have been obvious to combine Sugiura with Orito in view of Arimoto to obtain the invention as specified in claims 7 and 20.

Further regarding claims 9 and 22: Kamisuwa discloses an optical element (figure 2(OP) of Kamisuwa) which brings about a change in spatial positional deviation amount of the plurality of colors of pixel signals obtained by the plurality of photo-electric conversion element arrays of said image sensor (column 6, lines 12-20 of Kamisuwa), and the data on image sensing characteristic includes basic data (a,b,c) which indicates a basic amount of the positional deviation amount (column 8, lines 6-10 of Kamisuwa), and auxiliary data (Ia,Ib,Ic) which indicates a change characteristic of the positional deviation amount (column 8, lines 11-16 of Kamisuwa).

Further regarding claims 10 and 23: Kamisuwa discloses that said optical element is controlled or adjusted in accord-

ance with a magnification of an image sensed by said image sensor (column 6, lines 7-9 and lines 12-15 of Kamisuwa).

Further regarding claims 11 and 24: Kamisuwa discloses that the data on image sensing characteristic includes data which indicates a relationship between actual positions at which light forms images on the plurality of photoelectric conversion element arrays, and design positions thereof (column 8, lines 6-10 of Kamisuwa).

Further regarding claims 12 and 25: Kamisuwa discloses that said image sensing apparatus further comprises an optical system (figure 2(OP) of Kamisuwa) for forming an original image on an imaging surface of said image sensor (column 4, lines 8-15 of Kamisuwa), and said image sensor senses the original image (column 4, lines 16-21 of Kamisuwa).

Regarding claims 13 and 26: Orito does not disclose expressly that said image sensor has the plurality of photo-electric conversion element arrays which are separated at a predetermined line spacing.

Arimoto disclose that said image sensor has the plurality of photoelectric conversion element arrays which are separated at a predetermined line spacing (figure 22(180μ) and column 20, lines 3-5 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an image sensor in which the plurality of photoelectric conversion element arrays are separated at a predetermined line spacing, as taught by Arimoto. The motivation for doing so would have been to provide an even dot-per-inch reading of a document (column

20, lines 8-11 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 13 and 26.

Further regarding claims 14 and 27: Kamisuwa discloses that the plurality of colors are three colors including red (R), green (G), and blue (B) (column 9, lines 17-21 of Kamisuwa), and the data on image sensing characteristic includes data indicating spatial deviation amounts among R, G, and B pixel signals (column 8, lines 11-15 of Kamisuwa).

7. Claims 2, 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613), Sugiura (US Patent 4,679,074), and Ohta (US Patent 5,875,260).

Regarding claims 2 and 16: Orito in view of Arimoto and Sugiura does not disclose expressly that the image sensing characteristic is a linearity characteristic.

Ohta discloses an image sensing characteristic (L*a*b* space) that is a linearity characteristic (column 4, lines 4-7 of Ohta).

Orito in view of Arimoto and Sugiura is combinable with Ohta because they are from the same field of endeavor, namely the correction of digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a linearity characteristic, such as the L*a*b* space taught by Ohta, as the image sensing characteristic. The motivation for doing so would have been that L*a*b* space is a standardized color space that has been provided by the CIE (column 4, lines 4-5 of Ohta). Therefore, it would have

been obvious to combine Ohta with Orito in view of Arimoto and Sugiura to obtain the invention as specified in claims 2 and 16.

Regarding claim 6: Orito in view of Arimoto and Sugiura does not disclose expressly that said generation unit generates the image sensing characteristic correction data by inversely converting the data on image sensing characteristic.

Ohta discloses generating image sensing characteristic correction data (R',G',B') by inversely converting the data on image sensing characteristic (column 5, lines 60-64 of Ohta).

Orito in view of Arimoto and Sugiura is combinable with Ohta because they are from the same field of endeavor, namely the correction of digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to inversely convert the data on image sensing characteristic, as taught by Ohta. The motivation for doing so would have been to obtain the image signals resulting from the image data correction in the original color space (RGB) (column 5, lines 61-63 of Ohta). Therefore, it would have been obvious to combine Ohta with Orito in view of Arimoto and Sugiura to obtain the invention as specified in claim 6.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

04 January 2006

THOMAS Q.